

THE ROAD TO ZERO HUNGER

‘If you zoom out, you see a lot going on at the same time’

Ridding the world of hunger without severely harming the environment. That is no easy task given the growing world population. But Ivo Demmers thinks that with the Food Systems Approach you can at least see all the pieces of the puzzle. ‘With a good plan in your hands, it must be possible.’

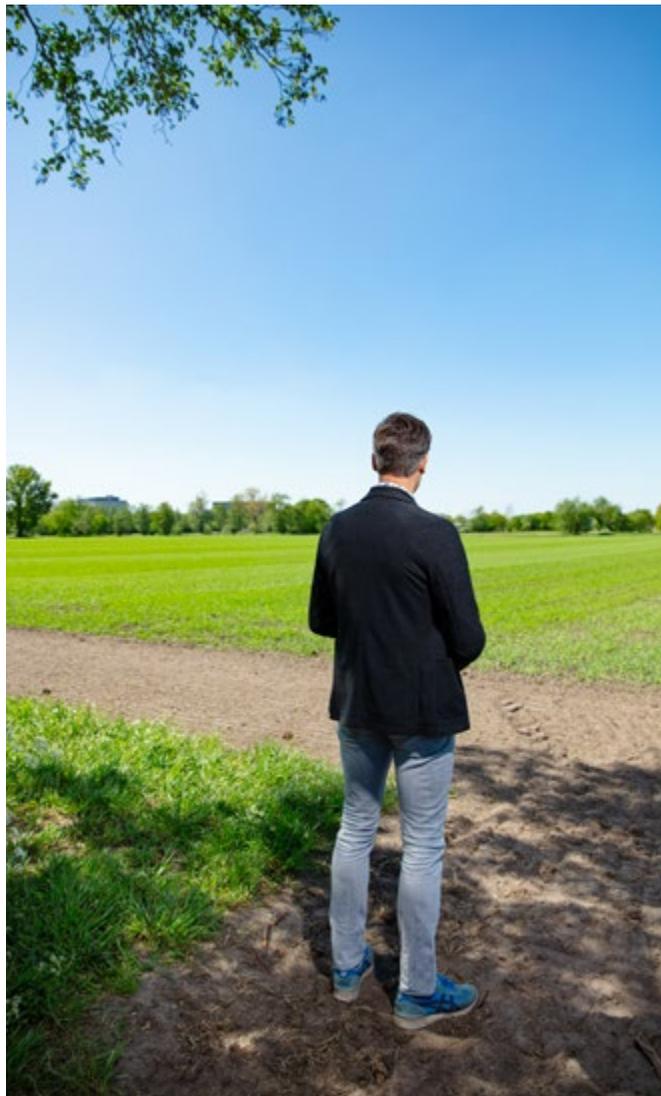
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Ivo Demmers, programme leader for Food Security and Valuing Water in Wageningen

‘Anyone who has ever attended a meeting about the food issue knows there is no one-stop solution’



How do you provide the entire world population with sufficient food that is not only healthy but also sustainably produced? The world is large and diverse, its population varying hugely in circumstances, preferences and customs, so not many solutions will work equally well everywhere. What is more: as soon as you solve one problem – boosting food production, say – there is a fair chance that another one will crop up. Like declining biodiversity, pollution and increasing greenhouse gas emissions. Anyone who has ever attended a meeting about the food issue in recent years knows that the only conclusion in the end is that there is no one-stop solution. This is a ‘wicked problem’ and there is no ‘silver bullet’.

‘No, there is no silver bullet,’ Ivo Demmers confirms calmly over the phone. ‘But you can definitely do something. What you need to bear in mind is the interdependence of many factors. You’ve got to keep all your juggling balls in the air `at the same time.’ Demmers leads the Food Security and Valuing Water research programme, one of the main strategic themes for Wageningen’s research investments. ‘Very specifically, Food Security and Valuing Water focuses on helping to reach zero hunger, the second of the United Nations’ Social Development Goals. But ‘zero hunger’ is a somewhat narrow title: banishing hunger from the world entails more than just producing enough food. If you look at the volume of cereals it takes to provide everyone on Earth with sufficient calories, we are already producing enough food. But are those cereals available in the right places? And are cereals alone sufficient for a healthy diet?’

How do you get a grip on a hydra like the global supply of healthy, sustainable food?

‘That is extremely tricky. All sorts of issues play a role in a food system. And they do so at several scales. If a plot of farmland is too dry, it would seem logical to irrigate it. But if you look at the bigger picture, you see that water shortages occur further downstream. The spatial scale makes a difference. You have to weigh up the advantages of irrigating a farm, or perhaps even a whole rural area against the disadvantages for the entire province or country. Besides the spatial scale, there is also the temporal scale: something that seems like a good idea today can cause big problems tomorrow.’

For example?

‘The situation in the Himalayas, where climate change is affecting the water supply through the year. The meltwater is now coming down at different times and in different volumes, so you have to adapt the farming

system to that. That is already being done in India, further downstream, but without taking the long term into consideration. Irrigation water is being pumped from deeper and deeper layers, which is speeding up the rate of salinization. Whereas what you should be doing is to use the meltwater when it is available.

Another example is a project in Indonesia in which we are researching how seaweed cultivation in the coastal zones can contribute to the local food supply. If you zoom out, you see that there's a lot going on at the same time: the area currently under cultivation is becoming salinized due to rising sea levels and soil subsidence. So it is a logical step to look at saline crops such as seaweed, which fetch good money internationally. But it doesn't help directly with the local food situation, because how much seaweed can you eat? Nevertheless,

the crop does have a positive effect because the money that comes in helps the local community to develop. The progress it makes ensures that people go on investing in the system and the profits can be used to improve the regular local crops as well.'

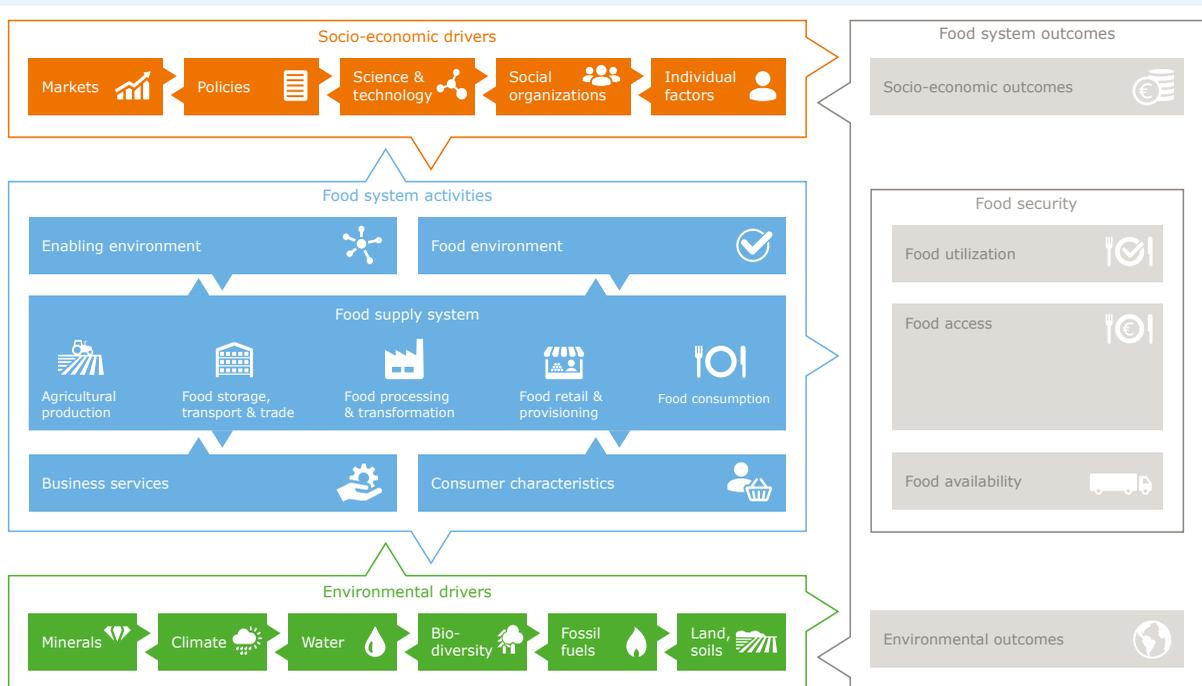
How does the Food Systems Approach help improve a situation like that?

'It provides a kind of checklist and reflects the interplay of factors. Take seaweed farming, for example. The community earns money from it, so that is a good development in itself. So you can put a tick next to socio-economic factors. But zoom in a bit more on the socio-economic situation and you'll see that it's massively inefficient. It is a complex system with a lot of intermediate trading, and as a result the ultimate goal – providing the >

FOOD SYSTEMS APPROACH

In seeking solutions to the global food problem, the Food Systems Approach pays attention to all the elements of a food system that work together and affect each other, such as agricultural production, biodiversity, the availability of water,

land use and the risks of climate change. There are also purely human factors such as the purchasing and eating habits of consumers, policy, and the civil society organizations concerned with food and food trade.





IVO DEMMERS

Ivo Demmers (43), programme leader for Food Security and Valuing Water, studied Land Use Planning at Wageningen University. Previously, he worked as a consultant for RoyalHaskoning/DHV in the Netherlands, Europe, Africa and Asia, as director of business development at the Netherlands Water Partnership and as director of operations and business development at water technology company Kalsbeek. He came to Wageningen in 2014 to work on business development and programme leadership in sustainable water management.

‘The Food Systems Approach exposes unintended side effects of changes’

community with an adequate supply of healthy and sustainably farmed food – stays out of sight. And on top of all that, it is obvious that the crop is not very sustainable. The float lines the seaweed is grown on are tied to plastic bottles and jerry cans that get worn down by the sun, sea and wind, forming a serious threat to the local ecosystem. So you have to put a cross next to environmental factors. That is another important function of the Food Systems Approach: exposing unintended side effects that you have to take into account so you don’t face unpleasant surprises later on.’

Is the Food Systems Approach fundamentally new? It seems obvious that there is more to food security than food production.

‘No doubt there was always an awareness that you have to look at the system as a whole, but it is only in the past decade that the problem has been tackled systematically so explicitly. In scientific circles, the need for an interdisciplinary approach to tackling food problems became increasingly apparent. Don’t underestimate the effects of compartmentalization in organizations. When I was still head of the Wageningen Sustainable Water Management programme, I was once asked by the World Bank to come and talk about food security. I asked if they also considered the links with water. They did do that, but in a different department. The people I was talking to worked on the topic of primary food production, but irrigation and water management were not in their portfolio. And yet you can’t grow food without water. The Food Systems Approach grew out of the recognition that you must look at the system as a whole. This approach is now in use all around the world.’

The approach seems comprehensive, but reality is intractable. For example, how do you cope with an unexpected event with a huge impact – like the current coronavirus pandemic?

‘In our research programme, we take the possibility of extreme events into account. What if a crop disease breaks out in a system? What if a global food crisis arises, as it did in 2008? We were not well prepared for a pandemic – nor was the rest of the world, incidentally – but we can make use of it to learn from previous extreme events and link those models together. If you do that, you can see that the effects of Covid-19 on the global food supply are the direct result of current policy: the massive surplus of potatoes used for French fries in the Netherlands is a direct consequence of the policy of closing all bars and restaurants. Internationally, governments are taking protectionist measures. That can be entered into the table under “socio-economic impact”.

‘You hope people will be prepared to change, even if it doesn’t produce immediate short-term benefits’

If things were to get out of hand, food system activities would get squeezed out. For example, if large numbers of farmers or factory workers were to fall ill. The Food Systems Approach provides a model for seeing which problems are at play where, and what is the best way to tackle them.’

A comprehensive overview is nice, but that is not a silver bullet either. You can’t feed the world with it.

‘That’s true. We use the approach primarily to provide input on what ought to be done differently. And for that too, we have a very structured model with different levels of transition. By paying constant attention to what needs to change at different levels, we get a fuller picture and arrive at an action plan.’

So a great deal of your work comes down to convincing the relevant people that certain actions should be undertaken?

‘That’s right: we involve people who have a crucial role to play in the solutions we propose within a food system. We help them understand what that role is, and how it relates to the other elements in the system. You hope people will then be prepared to change, even if it isn’t necessarily profitable in the short term. That is quite difficult, if you want to persuade a farmer in Bangladesh who can barely make ends meet to do something that will only cost him money. But that investment will provide him with a better future and the capacity to cope with future challenges.’

‘So the approach is also an attempt to find answers together with all the parties involved. “Finding answers together” is Wageningen’s express strategic policy, in recognition of the fact that you might be right scientifically, but that is not worth much if you don’t get the wider society on board. That went wrong in gene technology, for instance: scientists had big plans for it, but they were misunderstood and sometimes roundly rejected by the general public. We have learned from that.’

Big challenges lie ahead of us: a growing world population, global pressure on farmland due to soil exhaustion, climate change, and increasing water shortages. Doesn’t all that zooming out to the bigger picture get you down?

‘I sometimes wonder how it will all end up, yes. But people are amazingly innovative. We are learning all the time. The current crisis is teaching us a huge amount too. Also, we know that there is still a lot we can do. With improved irrigation techniques, farmers in many places could save at least 20 per cent on water. That is a vast amount of water. And a lot can be achieved, even in Africa, which, with a population set to double in the next couple of decades, is the weakest link when it comes to food security. Harvests now are a fraction of what they could be. That “yield gap” – the difference between what is possible and what is actually harvested – could be reduced a lot.’

Demmers concludes: ‘If you look at the figures, it must be possible to provide the world with enough healthy and sustainably farmed food. It takes massive changes, but if you tackle them together, step by step and with a good plan in your hands, it is possible.’ ■

www.wur.eu/foodsecurity-valuingwater

WCDI COURSES

Wageningen Centre for Development Innovation runs two courses relevant to this domain: Food Systems for Healthier and Sustainable Diets, and Resilient and Sustainable Food systems for a Food Secure Future. www.wur.nl/wcdi